Feb. 17, 1959 W. L. LIPSCOMB 2,874,271

INDIRECT LIGHTING FIXTURE

Filed June 9, 1953

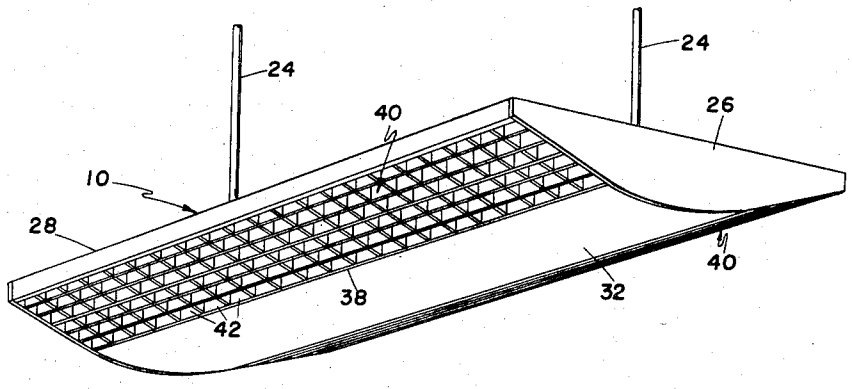


Fig. 1

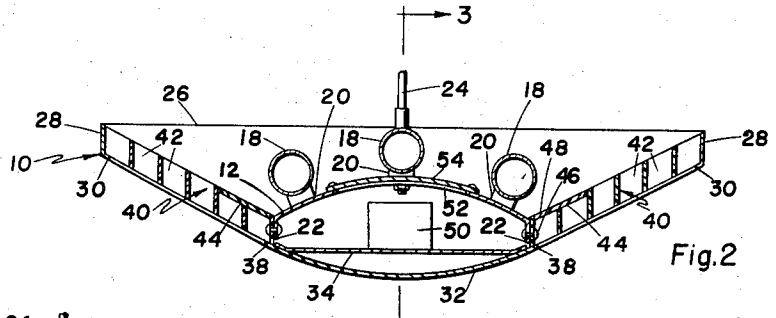


Fig.2

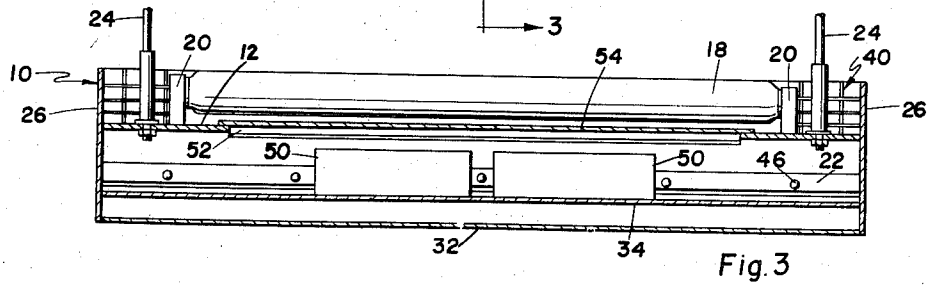


Fig.3

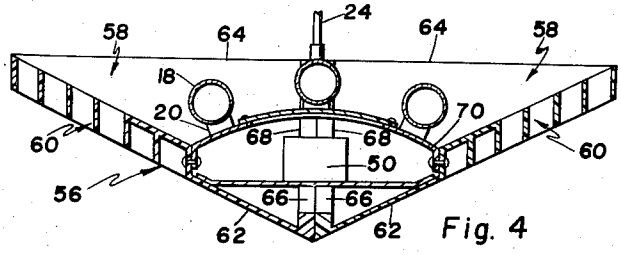


Fig. 4

INVENTOR.

WILLIS L. LIPSCOMB

BY

Knox & Knox

AGENTS FOR APPLICANT

United States Patent Office

2,874,271

Patented Feb. 17, 1959

2,874,271

INDIRECT LIGHTING FIXTURE

Willis L. Lipscomb, San Diego, Calif.

Application June 9, 1953, Serial No. 360,465

6 Claims. (Cl. 240—51.11)

The present invention relates generally to lighting fixtures and more particularly to an indirect lighting fixture, having novel cellular or lattice light control units and frame structure.

The primary object of this invention is to provide a lighting fixture in which the lamps are concealed from view below the level of the fixture so that the fixture has a high degree of efficiency while attaining a highly esthetic appearance.

Another object of this invention is to provide an indirect lighting fixture in which air may circulate freely, the moving air tending to prevent dust from settling on the fixture while the lamps are in operation.

Another object of this invention is to provide a luminaire in which the lamps may be replaced without dismantling any part of the fixture.

Another object of this invention is to provide a luminaire which is easily disassembled for maintenance and replacement of parts.

Another object of this invention is to provide an indirect lighting fixture which is adapted for fabrication from many different materials, so that the choice of material can be according to the dictates of availability and price considerations, the exact sizes and proportions being matters easily determined to suit particular conditions and needs.

Another object of this invention is to provide an indirect lighting fixture which is inexpensive and practicable to manufacture.

Finally, it is an object to provide an indirect lighting fixture of the aforementioned character which is simple, safe and convenient to operate, and which will give generally efficient and durable service.

With these and other objects definitely in view, this invention consists in the novel construction, combination and arrangement of elements and portions, as will be hereinafter fully described in the specification, particularly pointed out in the claims, and illustrated in the drawing which forms a material part of this disclosure and wherein similar characters of reference indicate similar or identical elements and portions throughout the specification and throughout the views of the drawing, and in which:

Fig. 1 is a perspective view, from below, of the luminaire.

Fig. 2 is a lateral sectional view of the luminaire.

Fig. 3 is a longitudinal sectional view of the luminaire.

Fig. 4 is a lateral sectional view showing an alternative method of constructing the luminaire.

Referring now to the drawing, the fixture includes a basket **10**, which constitutes the shielding portion of the luminaire, and a lamp supporting reflector **12** to which the basket is attached.

The reflector **12** is arcuate in cross section, the upper surface **14** thereof comprising the reflecting portion, above which the lamps **18** are disposed and upon which the lamp sockets **20** are mounted. The reflector may be dome-shaped or generally upwardly arched and having polyhedral reflecting surfaces. The reflector **12** has downwardly turned flanges **22** along its longitudinal edges, and the complete reflector **12** is suspended from a ceiling or other suitable supporting structure by means of stem hangers **24** of conventional type.

The basket **10** comprises a pair of end plates **26** joined by side angle plate members **28** which are provided with inwardly turned flanges **30** on their lower edges. The basket also includes a center panel **32** which is depressed at the center and secured to the end plates **26** which are shaped to conform to the cross-sectional shape of said center panel. Fastened to the center panel **32** is a reinforcing channel member **34**, extending substantially the full length thereof, and having angular flanges **36** along both edges. The width of the channel member **34** is such that the center panel **32** extends slightly on either side thereof to form support flanges **38**.

The elongated spaces between the channel member **34** and the side angle plate members **28** accommodate egg crate type cellular lattices **40** which are secured to the support flanges **38**, the flanges **30** and the end plates **26**. These cellular lattices **40** comprise a plurality of flat strips or slats arranged to form rows of rhomboid cells **42**, open at both ends and having substantially vertical or slightly inclined walls. The two inner rows of cells **42** are covered at their upper ends by shield plates **44** so that the lamps **18** are shielded from below the fixture. The material of the luminaire may be plastic, metal, or a combination of both, the cellular lattices in particular being suited for plastic construction.

The basket **10** is attached to the reflector **12** by means of rivets or bolts **46** which pass through the flanges **22** and the innermost slats **48** of the lattices **40**.

The electrical wiring and the ballasts **50** required for the tubular type lamps shown in the drawing, are attached to the channel **34** in the chamber between the reflector **12** and said channel. Access to the ballasts **50** and the wiring is obtained through an aperture **52** in the reflector **12**, said aperture being covered by a removable panel **54**.

It will be seen that the lamps **18** are easily replaced from above the fixture without dismantling any part of the structure. The cellular lattices allow air to circulate freely around the lamps by convection, while shielding the lamps and preventing direct light falling below the fixture. The lattices may, of course, be constructed of translucent material so that the downward light will be effectively diffused.

The air moving by convection around the fixture, while the lamps are in operation, tends to prevent dust from settling on the structure, the vertical walls of the cells **42** further assisting by causing dust to gravitate out of the fixture. While the unit is not in operation, a certain amount of dust may accumulate on the various surfaces but this is limited.

An alternative structure for the luminaire is shown in Fig. 4, this particular structure including a basket **56** which is molded from plastic in two similar portions **58**.

These basket portions **58** may be produced from the same mold and cemented or otherwise fastened together along their inner edges. It will be seen that each basket portion includes a cellular lattice **60**, of the same characteristics as that previously described, and an integral center panel **62** which is shown flat for ease of manufacture, the end plate **64** also being integral with the structure. The inner edge of the center panel **62** is reinforced by a thickened rib **66** which also provides an increased bonding surface for fastening the halves together. Similarly the inner edge of each end plate **64** is reinforced by a rib **68**. The assembled basket **56** is substantially V-shaped in cross section and is used with a reflector **70** similar in structure to the reflector **12** previously described.

It will be obvious that the purpose and functions of

the modified luminaire are similar to those described for the primary structure. The use of molded plastics to produce a unitary structure will greatly reduce the cost of manufacture, while the division of the structure into two similar halves will also reduce the cost of the mold.

It should be noted that the flat outer surfaces of the center panels **62** tend to reflect a considerable amount of the light which is reflected from the surrounding walls, thus increasing the illumination of the lower portions of the luminaire. Although the mid-portion of the curved center panel **32** is not illuminated as brightly as the flat sided center panels, the esthetic value of the curved surface may more than offset the advantage in prevention of a dark area on the underside of the fixture.

The operation of this invention will be clearly comprehended from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the drawing and the above recited objects. It will be obvious that all said objects are amply achieved by this invention.

Further description would appear to be unnecessary.

It is understood that minor variation from the form of the invention disclosed herein may be made without departure from the spirit and scope of this invention, and that the specification and drawing are to be considered as merely illustrative rather than limiting.

I claim:

1. A structural element for a lighting fixture comprising a reflector panel having an elongated light-reflective upper surface, means to mount elongated fluorescent lamps in positions parallel to and immediately above said surface, lamp shielding lattice structure in positions laterally abutting and inclining upwardly from said surface on both sides thereof and extending the full length thereof, and said panel constituting the means to support said lattice structure in said positions, said surface being elongated and curved upwardly in the form of a segment of a hollow cylinder and said lattice structure being of unitary construction and having a multiplicity of cells with flat vertical parallel walls.

2. A structural element for a lighting fixture comprising a panel having a light-reflective upper surface, means to mount lamps in positions immediately above said surface, lamp shielding lattice structure in positions laterally abutting said surface on both sides thereof and extending the full length thereof, and said panel constituting the means to support said lamp mounting means and said lattice structure in said positions, said surface being elongated and curved upwardly in the form of a segment of a hollow cylinder, said panel defining the upper boundaries of a wiring compartment, a plate fixed in relation to said panel and defining the lower boundaries of said compartment, said panel having means adjacent said end thereof for securement thereto of fixture suspension stems, said panel having an access opening extending throughout the major portion of the distance between the last mentioned means and a closure for said opening and said lattice structure being of unitary construction and having a multiplicity of cells with flat vertical parallel walls.

3. An indirect lighting fixture comprising an elongated reflector element of substantially inverted U-shape in cross section with depending laterally disposed flanges, means to mount a plurality of elongated tubular lamps above and parallel to said reflector, a basket attached to said flanges, said basket including a pair of end plates, side members interconnecting said end plates, a center panel secured to said end plates intermediate said side members, a pair of cellular lattice structures secured between said side members and said flanges, and shield plates covering portions of said lattice portions.

4. An indirect lighting fixture according to claim 3 wherein said lattice portions comprise a plurality of rhomboid cells having substantially vertical side walls.

5. An indirect lighting fixture comprising a reflector element comprising an elongated dome with a reflecting surface on its upper side, means for mounting a plurality of elongated tubular lamps above and parallel to said reflecting surface, a basket attached to said reflector element, said basket including a pair of end plates, a cellular lattice between and integral with said end plates, a shield plate integral with and covering a portion of said lattice, an imperforate center panel integral with said cellular lattice, and the center panels being joined together along the vertical central plane of the fixture.

6. An indirect lighting fixture comprising an elongated reflector element of substantially inverted U-shape in cross section with depending laterally disposed flanges, means to mount a plurality of elongated tubular lamps above and parallel to said reflector, a basket attached to said flanges, said basket including a pair of end plates, side members interconnecting said end plates, a center panel secured to said end plates intermediate said side members, a pair of cellular lattice structures secured between said side members and said flanges, shield plates covering portions of said lattice structures, said reflector element, said end plates and said center panel defining an enclosed chamber for electrical wiring, said reflector element being provided with an aperture permitting access to said chamber, and a closure for said aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

2,319,732	Guth	May 18, 1943
2,341,895	Beck	Feb. 15, 1944
2,421,967	Schepmoes	June 10, 1947
2,490,191	Baker	Dec. 6, 1949
2,597,739	Lacy et al.	May 20, 1952
2,659,807	Wakefield	Nov. 17, 1953
2,703,360	Lipscomb	Mar. 1, 1955
2,732,484	Lipscomb	Jan. 24, 1956
2,761,058	Lipscomb	Aug. 28, 1956
2,777,053	Lipscomb	Jan. 8, 1957